

## CLIMATOLOGICAL DATA FOR MAY, 1911.

## DISTRICT NO. 9, COLORADO VALLEY.

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## GENERAL SUMMARY.

May was somewhat warmer than the average in the northern part of the Colorado drainage area, and cooler than the average in the southern part. There were a number of sharp changes in temperature, but in this respect the month did not differ from the average, and in addition the extremes reached were well within the limits common to May. A wide departure from the average was noted, however, in connection with the rainfall. Of the stations reporting only one reported as much as the normal amount, and taken as a whole the average precipitation was less than one-third of the normal. The deficiency was least marked on the drainage of the San Juan, yet at Durango there have been only three drier Mays in 16 years; at Grand Junction, on the Grand, the least precipitation for May in 20 years was recorded. Farther south on the Mimbres, Gila, and the Colorado, proper, there was almost an entire absence of precipitation.

Except for a few short periods low pressure exerted the controlling influence on weather conditions. As usual with the advance of the season toward midsummer there is a tendency of the nearly permanent southwestern low pressure in the vicinity of the Gulf of California to spread northward. It is not likely that this movement was any stronger during May, 1911, than usual. The persistency of low pressure, generally ill-defined and of a shifting character, without precipitation, is probably to be accounted for by the small number of high-pressure areas of sufficient strength to move inland from the Pacific.

## TEMPERATURE.

The mean of the 141 stations reporting was  $60.2^{\circ}$  or  $0.3^{\circ}$  below the normal. By subdivisions the means and departures were: Western Wyoming,  $47.7^{\circ}$ ,  $+1.3^{\circ}$ ; western Colorado,  $50.8^{\circ}$ ,  $+0.7^{\circ}$ ; eastern Utah,  $56.6^{\circ}$ ,  $+0.4^{\circ}$ ; western New Mexico,  $60.1^{\circ}$ ,  $+0.4^{\circ}$ ; Arizona,  $67.2^{\circ}$ ,  $-1.1^{\circ}$ ; and southeastern Nevada,  $63.3^{\circ}$ . The highest and lowest monthly means,  $81.8^{\circ}$  and  $30.6^{\circ}$ , were as usual at Mokawk Summit, Ariz., and Corona, Colo., respectively. After the first day of the month, which was cool, there was about a week with temperatures above the normal, the excess being marked in western Colorado. During the rest of the month cool weather predominated with an occasional warm day here and there. Of the cool periods the 15th and 16th, 26th-28th throughout the district, and the 19th and 20th in western Colorado were the most notable. By subdivisions the extremes were: Western Wyoming,  $86^{\circ}$  at Green River and  $12^{\circ}$  at Battle Mountain; western Colorado,  $90^{\circ}$  at Delta and  $9^{\circ}$  near Silverton; eastern Utah,  $94^{\circ}$  at Springdale and  $13^{\circ}$  at Scofield; western New Mexico,  $100^{\circ}$  at Columbus and  $18^{\circ}$  at Luna; Arizona,  $109^{\circ}$  at Gilabend and  $15^{\circ}$  at

Flagstaff No. 2; southeastern Nevada,  $97^{\circ}$  at Logan and  $33^{\circ}$  at Caliente.

Frosts were frequent in all parts of the district, except southern New Mexico and southern Arizona. In Wyoming hard freezing weather was general. In parts of the lower Grand Valley the temperature was slightly below the freezing point on the night of the 10th-11th. Apples dropped badly, probably on account of the cold. In southwestern Colorado freezing temperatures occurred on the 16th. In localities fruit was killed, in others but little harm was done. In Montrose and Delta Counties considerable damage was done by frost on the 20th and 21st. In Utah the minimum temperature of the month was below the freezing point at three-fourths of the stations, principally on the 11th. No reports have been received as to the extent of the damage. In northwestern New Mexico hard freezing weather occurred on the 11th. Frosts also occurred on the 16th, 20th, 21st, and 27th in the San Juan and upper Gila Valleys, damaging fruit, gardens, and corn.

## PRECIPITATION.

The average for the 189 stations reporting was 0.19 inch, or 0.47 inch below the normal. The average for May, 1910, was 0.38 inch. By subdivisions the means and departures were: Green,  $0.31$ ,  $-0.88$ ; Grand,  $0.45$ ,  $-0.94$ ; San Juan,  $0.44$ ,  $-0.67$ ; Little Colorado,  $0.01$ ,  $-0.56$ ; Gila,  $0.03$ ,  $-0.21$ ; Mimbres, trace,  $-0.17$ ; and Colorado, proper,  $0.08$ ,  $-0.43$  inch. The greatest monthly amount was 2.14 inches at Corona, Colo., while there was none at 1 station in western Colorado, 10 in eastern Utah, 9 in western New Mexico, 1 in southeastern Nevada, and 55 in Arizona. The average number of days with 0.01 inch or more of precipitation was 3 in western Wyoming, 4 in western Colorado, 1 in eastern Utah, 1 in western New Mexico, 1 in southeastern Nevada, and 0 in Arizona, and for the district as a whole 2 days.

## MISCELLANEOUS.

The sunshine was above the average. Grand Junction reported 76, Durango 78, Phoenix 94, and Flagstaff and Yuma 97 per cent of the possible.

The mean relative humidity was lower than the average, especially in northern Arizona. The following values were reported: Grand Junction 45, Durango 42, Flagstaff 32, Phoenix 33, and Yuma 34 per cent.

## NOTES.

*Bloomfield, N. Mex.*—May was very dry and windy. Frost caused much damage to all crops. The range is good.

*Fruitland, N. Mex.*—May will go on record as a phenomenal month. Fruit is gone; hay, corn, and wheat were frozen some, but all crops are growing now.

*Luna, N. Mex.*—May was very dry and cold. Irrigation water is scarce.

#### THE COLORADO RIVER.

For May the volume discharged by the Green River at Elgin, Utah, was about the average; that of the Grand at Fruita, Colo., was appreciably higher than the average, and it is probable that the San Juan was fully up to the average; data for previous Mays, however, are not available for comparison. After the first four days, during which period the Green, the Grand, and the San Juan fell slowly, these rivers that form the Colorado rose steadily, the San Juan reaching the highest stage of the month on the 10th, the Grand on the 11th, and the Green on the 13th. High stages continued during the rest of the month. In the Colorado, proper, at Grand Canyon, Ariz., the maximum stage, 48 feet, occurred on the 13th, and the lowest, 35 feet, on the 20th and 21st. At Topock, Ariz., near Needles, Cal., there was a slight crest on the

4th and 5th, followed by a decline. Beginning with the 9th there was a steady rise, culminating on the 15th and 16th with a gauge height of 15 feet. At Yuma the lowest stage occurred on the 1st, and the highest on the 19th and 20th, the range being 3.9 feet.

#### FOREST FIRES IN ARIZONA.

Forest fires broke out in the northern section of the Garces National Forest early in May. Three troops of soldiers were ordered from Fort Huachuca to assist the forest rangers in fighting the fire, which spread over a large area to Garden Canyon, on the Military Reservation. Another fire was discovered near Rainsey Canyon, covering an area of 5 miles in length and about three-fourths of a mile in width. Owing to the high southwest winds then prevailing the fires were checked with great difficulty during the first four days; but after the winds decreased in force the fires were extinguished without great effort.





TABLE 1.—*Climatological data for May, 1911. District No. 9—Continued.*

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.						Sky.	Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
<i>Arizona—Continued.</i>																			
Parker.	Yuma.	345	17	72.6	-3.8	102	5†	42	1†	56	0.00	-0.14	0.00	0	0	28	3	0	M. A. Israel, M. D.
Payson.	Gila.	5,550	3	56.8	-	83	4†	27	16	51	0.00	0.00	0	0	26	5	0	sw.	
Phoenix.	Maricopa.	1,108	16	74.1	-0.7	99	23	49	16	40	0.00	-0.03	0.00	0	23	8	0	U. S. Weather Bureau.	
Phoenix (1).	do.	1,092	22	72.0	-1.3	100	22†	42	1†	50	0.00	-0.06	0.00	0	23	7	1	G. Acuff.	
Phoenix (2).	do.	1,189	3	75.8	-	101	23	45	16†	50	0.00	0.00	0	0	27	2	0	Horne & Armstrong.	
Pinal Ranch.	Pinal.	4,520	17	-	-	-	-	-	-	0.00	-0.32	0.00	0	0	27	4	0	Irion & Craig.	
Pinto.	Apache.	5,660	6	-	-	-	-	-	-	0.00	-	-	-	-	-	-	-	Mrs. C. F. Henning.	
Prescott.	Yavapai.	5,320	45	63.8	-4.9	80	4†	27	30	49	T.	-0.51	T.	0	0	30	1	0	J. W. Flynn, M. D.
Quartzite.	Yuma.	800	4	74.6	-	102	21	45	12	53	0.00	0.00	0	0	30	1	0	W. E. Scott.	
Redrock.	Pinal.	1,864	3	76.6	-	102	8†	48	1	48	0.00	0.00	0	0	15	16	0	W. J. Crowell.	
Roosevelt.	Gila.	2,175	6	72.4	-	96	23	43	14	50	0.00	0.00	0	0	28	3	0	U. S. Reclamation Service.	
Sacaton.	Pinal.	1,280	4	73.2	-	101	22†	43	16	51	0.00	0.00	0	0	26	5	0	E. W. Hudson.	
St. Johns.	Apache.	5,650	8	60.0	-	89	31	25	11	57	T.	-	T.	0	0	18	10	3	A. Shreeve.
St. Michaels.	do.	6,950	23	56.8	+3.4	81	31	26	16	48	T.	-0.63	T.	0	0	23	4	4	sw.
Salome.	Yuma.	1,875	4	64.8	-	95	22	35	9†	48	0.00	0.00	0	0	24	6	1	Rev. A. Weber, O. F. M.	
San Carlos.	Gila.	2,456	29	71.0	+0.7	98	8†	40	15	49	0.00	-0.26	0.00	0	20	9	2	Mrs. M. B. Swartz.	
San Simon.	Cochise.	3,609	25	71.9	-4.4	98	23	44	16	42	0.00	-0.15	0.00	0	28	3	0	F. S. Thomas.	
Seligman.	Yavapai.	5,219	5	-	-	-	-	-	-	0.00	-	-	-	-	-	-	-	Agent, Southern Pacific Co.	
Sentinel.	Maricopa.	685	13	76.6	-2.4	103	22	48	16	46	0.00	-T.	0.00	0	0	26	5	0	Lib., A., T & S. F. Ry. Co.
Showlow.	Navajo.	6,300	-	-	-	-	-	-	-	0.00	-	-	-	-	-	-	-	Agent, Southern Pacific Co.	
Silverbell.	Plma.	2,650	6	76.3	-	97	7	50	15	37	0.00	0.00	0	0	23	4	4	Miss Z. Hall.	
Snowflake.	Navajo.	5,644	4	56.1	-	85	5	24	11	55	0.00	0.00	0	0	19	11	1	Imperial Copper Co.	
Springerville.	Apache.	5,862	-	55.7	-	82	8	24	16	55	0.00	0.00	0	0	26	5	0	W. J. Flake.	
Supai.	Coconino.	3,200	5	70.7	-	94	4†	42	1†	45	0.00	0.00	0	0	27	4	0	U. S. Forest Service.	
Tempe.	Maricopa.	1,185	7	71.8	-	102	23	41	16	55	0.00	0.00	0	0	23	7	1	A. H. Symons.	
Thatcher.	Graham.	2,800	8	-	-	-	-	-	-	0.00	-	-	-	-	-	-	-	F. H. Simmons.	
Tombstone.	Cochise.	4,550	15	70.4	-2.5	96	31	46	1†	43	0.10	-0.14	0.10	0	1	20	10	1	Prof. J. H. Larson.
Truxton.	Mohave.	3,997	2	61.0	-	89	22	35	16	46	T.	-	T.	0	0	27	3	1	F. N. Walcott.
Tuba.	Coconino.	4,500	11	60.0	-1.7	86	5†	34	23	49	0.00	-0.19	0.00	0	20	10	1	G. A. Dennis.	
Tucson.	Plma.	2,390	31	72.7	-0.4	97	23	43	21	51	0.00	-0.13	0.00	0	15	16	0	C. R. Jefforis.	
Tucson (1).	do.	2,380	3	70.0	-	98	4†	35	1	55	0.00	0.00	0	0	22	8	1	University of Arizona.	
Tucson (2).	do.	2,526	-	70.6	-	97	8†	42	1	49	0.00	0.00	0	0	18	9	4	J. M. Robe.	
Vall.	do.	3,421	12	77.2	+2.6	100	29	52	1†	46	0.00	-0.02	0.00	0	28	3	0	U. S. Coast & Geod. Sur.	
Walnut Grove.	Yavapai.	8,649	18	-	-	-	-	-	-	0.00	-0.09	0.00	0	0	27	4	0	J. O. Carter.	
Wickenburg.	Maricopa.	2,072	12	70.2	+0.5	97	22†	40	14†	55	0.00	-0.19	0.00	0	20	11	0	Agent, Southern Pacific Co.	
Wilcox.	Cochise.	4,164	28	-	-	-	-	-	-	0.00	-	-	-	-	-	-	-	Agent, S. F. P. & P. Ry.	
Williams.	Coconino.	6,750	12	52.6	-1.4	79	24	22	15	50	0.12	-0.78	0.12	0	1	27	4	0	E. J. Nordyke.
Winslow.	Navajo.	4,883	7	60.4	-	91	4	31	13	53	0.00	0.00	0	0	27	4	0	J. F. Bauer.	
Yarnell.	Yavapai.	4,700	12	-	-	-	-	-	-	0.00	-	-	-	-	-	-	-	E. L. Bartholomew.	
Yuma.	Yuma.	141	30	74.2	-2.6	102	22	48	16	48	0.00	-0.03	0.00	0	0	31	0	0	U. S. Weather Bureau.
Yuma(1).	do.	150	3	69.6	-	99	22	41	16	54	0.00	-	0.00	0	0	31	0	0	A. L. Crane.
<i>Nevada.</i>		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Caliente.	Lincoln.	4,407	1	58.4	-	83	22†	33	14	46	0.02	-	0.01	0	2	27	2	2	se.
Logan.	Clark.	1,700	4	68.2	-	97	22	40	1	50	0.00	-	0.00	0	0	11	17	3	s.
																		Salt Lake Route.	
																		R. M. Filcher.	

a, b, c, etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.

\*\* Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.

† Also on other dates.

T Precipitation is less than 0.01 inch rain or melted snow.





TABLE 2.—*Daily precipitation for May, 1911. District No. 9—Continued.*

Stations.	Watershed.	Day of month.																														Total.	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
<i>Arizona—Contd.</i>																																	
Roosevelt	Salt																																0.00
Sacaton	Gila																															0.00	
St. Johns	Little Colo.						T.																									T.	
St. Michaels	do						T.	T.																								T.	
Salome	Colorado																															0.00	
San Carlos	Gila																															0.00	
San Simon	do																															0.00	
Seligman	Verde																																
Sentinel	Gila																															0.00	
Showlow	Little Colo.																																
Silverbell	Santa Cruz																															0.00	
Snowflake	Little Colo.																															0.00	
Springerville	do																															0.00	
Supai	Colorado																															0.00	
Tempe	Salt																															0.00	
Thatcher	Gila																															0.00	
Tombstone	San Pedro																															0.10	
Truxton	Colorado																															T.	
Tuba	Little Colo.																															0.00	
Tucson	Santa Cruz																															0.00	
Tucson (1)	do																															0.00	
Tucson (2)	do																															0.00	
Vall	do																															0.00	
Walnut Grove	Hasseyampa																															0.00	
Wickenburg	do																															0.00	
Wilcox	Desert																															0.12	
Williams	Colorado																															0.00	
Winslow	Little Colo.																															0.00	
Yarnell	Hasseyampa																															0.00	
Yuma	Colorado																															0.00	
Yuma (1)	do																															0.00	
<i>Nevada.</i>																																	
Caliente	Colorado																															0.02	
Logan	do																															0.00	

\* Precipitation included in that of the next measurement.

† Separate dates of falls not recorded.

|| Precipitation for the 24 hours ending on the morning when it is measured.

T Precipitation is less than 0.01 inch rain or melted snow.

